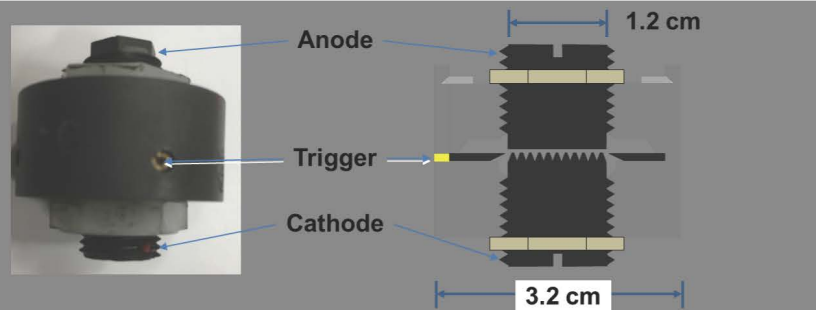
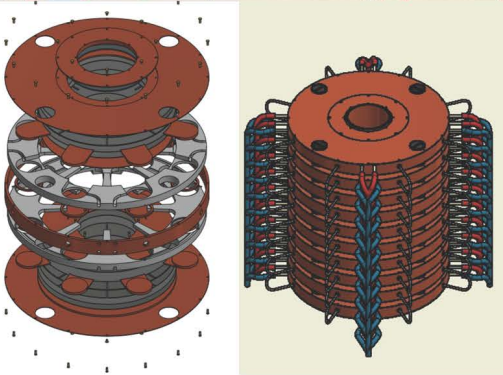
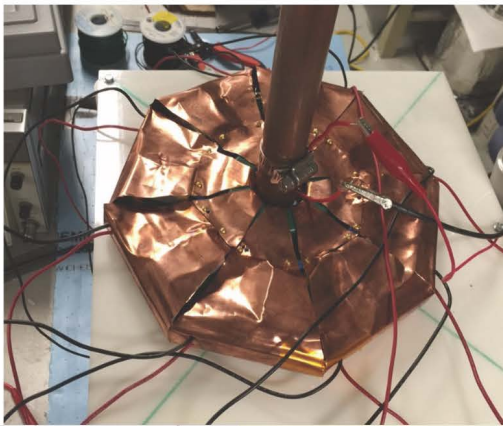


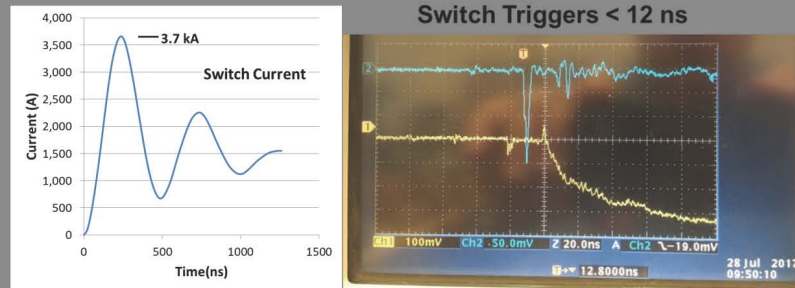
# Linear Transformer Drivers for Z-pinch Based Propulsion

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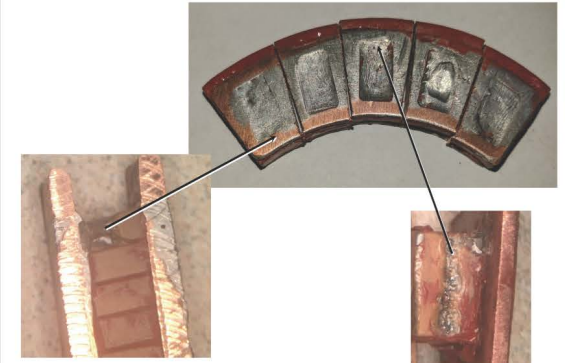
Concept and experimental LTD's developed at MSFC. Upper figure shows first system to fire multiple bricks simultaneously. Lower views show current LTD and stack design.



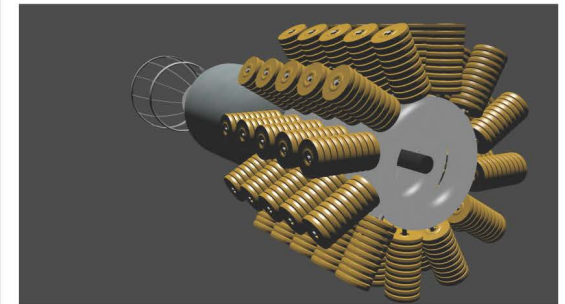
A successful LTD system requires fast, low inductance switches. The figure above shows our current design iteration. This switch is responding within 12 ns with sufficient current (figure below) for our LTD design.



Switch Resistance: 0.05 ohms  
Test Inductance: 12 nH  
Test Voltage:  $\pm 2000V$   
Test Capacitance:  $2 \times 0.25 \mu F$   
Trigger Voltage: +1000V



(Upper) Recent failure of current design. Five capacitor stack shorted across weakest capacitors.  
(Below) Illustration of the LTD system driving the Pulsed Fission Fusion Vehicle for an interplanetary spacecraft.



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